L Number	Hits	Search Text	DB	Time stamp
3	10155	(detector or detection) near4 angle and	USPAT;	2004/04/12 11:39
		angle near5 (move\$5 or adjust\$4 or rotat\$4)	US-PGPUB; DERWENT	
4	4	((detector or detection) near4 angle and angle near5 (move\$5 or adjust\$4 or rotat\$4)) and 435/283.1.ccls.	USPAT; US-PGPUB;	2004/04/12 11:14
5	27	_ , , ,	DERWENT USPAT; US-PGPUB;	2004/04/12 11:30
6	962	rotat\$4)) and 422/82.05.ccls. (detector or detection) near4 angle and	DERWENT USPAT;	2004/04/12 11:27
7	509	(detection or detector) same mirror near5 (move\$5 or adjust\$4 or rotat\$4) ((detector or detection) near4 angle and	US-PGPUB; DERWENT USPAT;	2004/04/12 11:27
		(detection or detector) same mirror near5 (move\$5 or adjust\$4 or rotat\$4)) and mirror near4 angle	US-PGPUB; DERWENT	
8	3180	((detector or detection) near4 angle and angle near5 (move\$5 or adjust\$4 or rotat\$4)) and (multiple or second or two) near3 (detector or detection)	USPAT; US-PGPUB; DERWENT	2004/04/12 11:35
9	27	(((detector or detection) near4 angle and angle near5 (move\$5 or adjust\$4 or rotat\$4)) and 422/82.05.ccls.) and 422/82.05.ccls.	USPAT; US-PGPUB; DERWENT	2004/04/12 11:29
10	27	((((detector or detection) near4 angle and angle near5 (move\$5 or adjust\$4 or rotat\$4)) and 422/82.05.ccls.) and 422/82.05.ccls.	USPAT; US-PGPUB; DERWENT	2004/04/12 11:43
11	0	((((detector or detection) near4 angle and angle near5 (move\$5 or adjust\$4 or rotat\$4)) and 422/82.05.ccls.) and 422/82.05.ccls.) not (((detector or detection) near4 angle and angle near5 (move\$5 or adjust\$4 or rotat\$4)) and 422/82.05.ccls.)	USPAT; US-PGPUB; DERWENT	2004/04/12 11:30
12	15	(((detector or detection) near4 angle and angle near5 (move\$5 or adjust\$4 or rotat\$4)) and (multiple or second or two) near3 (detector or detection)) and 422/82.05.ccls.	USPAT; US-PGPUB; DERWENT	2004/04/12 11:30
13	4	<pre>(multiple or second or two) near3 (detector or detection) same (wavelenght near3 (different or second))</pre>	USPAT; US-PGPUB;	2004/04/12 11:41
14	136664	(multiple or second or two) near3 (detector or detection)	DERWENT USPAT; US-PGPUB;	2004/04/12 11:40
15	27739	((multiple or second or two) near3 (detector or detection)) and (detector or detection) near5 (move\$5 or adjust\$4 or rotat\$4)	DERWENT USPAT; US-PGPUB; DERWENT	2004/04/12 11:39
16	21672	((multiple or second or two) near3 (detector or detection)) and (detector or	USPAT; US-PGPUB;	2004/04/12 11:40
17	100630	detection) near5 (move\$5 or adjust\$4) (multiple or second or two) near2 (detector or detection)	DERWENT USPAT; US-PGPUB;	2004/04/12 11:40
18	17313	((multiple or second or two) near2 (detector or detection)) and (detector or detection)	DERWENT USPAT; US-PGPUB;	2004/04/12 11:40
19	55	detection) near5 (move\$5 or adjust\$4) (((multiple or second or two) near2 (detector or detection)) and (detector or detection) near5 (move\$5 or adjust\$4)) and 422/82.05.ccls.	DERWENT USPAT; US-PGPUB; DERWENT	2004/04/12 11:40
20	0	(((multiple or second or two) near2 (detector or detection)) and (detector or detection) near5 (move\$5 or adjust\$4)) and (detector or detection) same (wavelenght near3 (different or second))	USPAT; US-PGPUB; DERWENT	2004/04/12 11:41

21	4	(((multiple or second or two) near2	USPAT;	2004/04/12 11:43
		(detector or detection)) and (detector or	US-PGPUB;	
		detection) near5 (move\$5 or adjust\$4)) and	DERWENT	
1		(wavelenght near3 (different or second))		
22	4461	(((multiple or second or two) near2	USPAT;	2004/04/12 11:43
		(detector or detection)) and (detector or	US-PGPUB;	
		detection) near5 (move\$5 or adjust\$4)) and	DERWENT	
		(wavelength)		
23	1682	(((multiple or second or two) near2	USPAT;	2004/04/12 11:43
		(detector or detection)) and (detector or	US-PGPUB;	
}		detection) near5 (move\$5 or adjust\$4)) and	DERWENT	
· .		(wavelength near3 (different or second))		
24	26	((((multiple or second or two) near2	USPAT;	2004/04/12 11:43
		(detector or detection)) and (detector or	US-PGPUB;	
		detection) near5 (move\$5 or adjust\$4)) and	DERWENT	
		<pre>(wavelength near3 (different or second)))</pre>		
		and 422/82.05.ccls.		

L Number	Hits	Search Text	DB	Time stamp
3	10155	(detector or detection) near4 angle and	USPAT;	2004/04/12 11:39
		angle near5 (move\$5 or adjust\$4 or	US-PGPUB;	
		rotat\$4)	DERWENT	
4	4	((detector or detection) near4 angle and	USPAT;	2004/04/12 11:14
		angle near5 (move\$5 or adjust\$4 or	US-PGPUB;	
_		rotat\$4)) and 435/283.1.ccls.	DERWENT	0004/04/25
5	27	' ' ' ' ' ' ' ' ' ' ' ' ' ' ' ' ' ' '	USPAT;	2004/04/12 11:30
1	1	angle near5 (move\$5 or adjust\$4 or rotat\$4)) and 422/82.05.ccls.	US-PGPUB; DERWENT	
6	962	(detector or detection) near4 angle and	USPAT;	2004/04/12 11:27
	302	(detection or detection) hear4 angle and (detection or detector) same mirror near5	USPAT; US-PGPUB;	2007/04/12 11:2/
1	Į ,	(move\$5 or adjust\$4 or rotat\$4)	DERWENT	
7	509	((detector or detection) near4 angle and	USPAT;	2004/04/12 11:27
1	[.	(detection or detector) same mirror near5	US-PGPUB;	
1		(move\$5 or adjust\$4 or rotat\$4)) and	DERWENT	
	Ţ.,	mirror near4 angle	1	
8	3180	((detector or detection) near4 angle and	USPAT;	2004/04/12 11:35
1	(,	angle near5 (move\$5 or adjust\$4 or	US-PGPUB;	
	E i	rotat\$4)) and (multiple or second or two)	DERWENT	
9	27	near3 (detector or detection) (((detector or detection) near4 angle and	IIGDAM -	2004/04/10 11 00
	l 2',	angle near5 (move\$5 or adjust\$4 or	USPAT; US-PGPUB;	2004/04/12 11:29
	1	rotat\$4)) and 422/82.05.ccls.) and	DERWENT	
1	(i	422/82.05.ccls.		
10	27	,	USPAT;	2004/04/12 11:43
	· · ·	angle near5 (move\$5 or adjust\$4 or	US-PGPUB;	,
	l i	rotat\$4)) and 422/82.05.ccls.) and	DERWENT	
	۱ ،	422/82.05.ccls.) and 422/82.05.ccls.		
11	0	((((detector or detection) near4 angle	USPAT;	2004/04/12 11:30
	۱ ۱	and angle near5 (move\$5 or adjust\$4 or	US-PGPUB;	
	!	rotat\$4)) and 422/82.05.ccls.) and	DERWENT	
	1	422/82.05.ccls.) and 422/82.05.ccls.) not (((detector or detection) near4 angle and	 	ļ
	1	(((detector or detection) near4 angle and angle near5 (move\$5 or adjust\$4 or		
	!	rotat\$4)) and 422/82.05.ccls.)		Į
12	15		USPAT;	2004/04/12 11:30
	۱ - ۱	angle near5 (move\$5 or adjust\$4 or	US-PGPUB;	
<u> </u>	'	rotat\$4)) and (multiple or second or two)	DERWENT	
	'	near3 (detector or detection)) and		
12	١	422/82.05.ccls.		
13	4		USPAT;	2004/04/12 11:41
	'	(detector or detection) same (wavelenght	US-PGPUB;	
14	136664	near3 (different or second)) (multiple or second or two) near3	DERWENT USPAT;	2004/04/10 11 10
		(detector or detection)	USPAT; US-PGPUB;	2004/04/12 11:40
	•	acception,	DERWENT	
15	27739	((multiple or second or two) near3	USPAT;	2004/04/12 11:39
	- 1	(detector or detection)) and (detector or	US-PGPUB;	_, _,,
į l		detection) near5 (move\$5 or adjust\$4 or	DERWENT	
1.6		rotat\$4)		
16	21672	((USPAT;	2004/04/12 11:40
		(detector or detection)) and (detector or	US-PGPUB;	
17	100630	detection) near5 (move\$5 or adjust\$4)	DERWENT	2004/04/20 ==
- '	100030	(multiple or second or two) near2 (detector or detection)	USPAT;	2004/04/12 11:40
			US-PGPUB; DERWENT	
18	17313	((multiple or second or two) near2	USPAT;	2004/04/12 11:40
		(detector or detection)) and (detector or	US-PGPUB;	1,01/32 11:40
		detection) near5 (move\$5 or adjust\$4)	DERWENT	
19	55	(((multiple or second or two) near2	USPAT;	2004/04/12 11:40
	ļ	(detector or detection)) and (detector or	US-PGPUB;	1
	ļ	detection) near5 (move\$5 or adjust\$4)) and	DERWENT	
20	0	422/82.05.ccls.	HORE	0004/015
۷ ا	O	(((multiple or second or two) near2	USPAT;	2004/04/12 11:41
l		(detector or detection)) and (detector or detection) near5 (move\$5 or adjust\$4)) and	US-PGPUB;	1
	ļ	(detection) nears (movess or adjust\$4)) and (detector or detection) same (wavelenght	DERWENT	1
		near3 (different or second))		

21	4	(((multiple or second or two) near2	USPAT;	2004/04/12 11:43
		(detector or detection)) and (detector or	US-PGPUB;	
		detection) near5 (move\$5 or adjust\$4)) and	DERWENT	
	 	(wavelenght near3 (different or second))		
22	4461	(((multiple or second or two) near2	USPAT;	2004/04/12 11:43
		(detector or detection)) and (detector or	US-PGPUB;	
		detection) near5 (move\$5 or adjust\$4)) and	DERWENT	
•		(wavelength)		
23	1682	(((multiple or second or two) near2	USPAT;	2004/04/12 11:43
		(detector or detection)) and (detector or	US-PGPUB;	
		detection) near5 (move\$5 or adjust\$4)) and	DERWENT	
		(wavelength near3 (different or second))		
24	26	((((multiple or second or two) near2	USPAT;	2004/04/12 11:43
	•	(detector or detection)) and (detector or	US-PGPUB;	
		detection) near5 (move\$5 or adjust\$4)) and	DERWENT	
		<pre>(wavelength near3 (different or second)))</pre>		}
		and 422/82.05.ccls.		

US-PAT-NO:

6118532

DOCUMENT-IDENTIFIER:

US 6118532 A

TITLE:

Instrument for determining static and/or dynamic

light

scattering

----- KWIC -----

Abstract Text - ABTX (1):

The present invention relates to an instrument for determining the light

scattered by a sample comprising a platform rotatable about an axis of rotation; a sample holder disposed along the axis of rotation; a light source

for producing a beam of coherent light that can be focused on a sample in the

sample holder; and a $\underline{\textbf{plurality of detectors}}$ disposed and rotatable about the

axis of rotation and adapted so that each $\frac{\text{detector can be adjusted}}{\text{to focus on}}$

a common point along the axis of rotation by reference to the beam.

Brief Summary Text - BSTX (2):

The present invention relates to an instrument for determining static and/or $\ensuremath{\mathsf{Static}}$

dynamic light scattering. More particularly, this instrument involves a light

source for producing coherent light and a plurality of detectors.

Brief Summary Text - BSTX (9):

Nevertheless, for many samples simultaneous measurement of static and

dynamic light scattering using consecutive measurements from several scattering

angles represents a problem. Satisfactory results are not always obtained in

consecutive measurements whether due to sample instability caused by jelling,

polymerization, and/or crystallization, or due to other limitations such as the

measuring time available for each sample. There are also standard tests where

static and dynamic light scattering are measured consecutively from different

scattering angles, for example, in measuring particle size, without the test

results being necessarily affected. The scattered light may be observed

simultaneously by a plurality of detectors from different viewing angles. See,

German Patent 38 13 718 Al. This, however, fails to provide a solution in that

it is extremely costly to adjust a plurality of detectors so that each detector

receives scattered light from the same scattering volume. Moreover, the number

of scattering angles available for measuring is limited by the number of the

detectors used around the sample.

Brief Summary Text - BSTX (11):

An object of the invention is to develop an instrument for determining

static and/or dynamic light scattering allowing simultaneous measurement of a

sample in a solution from a plurality of scattering $angles\ by\ means\ of$

plurality of detectors, whereby simple but accurate adjustment of the detectors

can be made.

Brief Summary Text - BSTX (12):

This object is achieved with an instrument for determining static and/or

dynamic light scattering comprising a light source for producing a laser beam

directed at a sample contained in a cylindrical cell, the sample being located

in the center of a rotary platform, coaxially to its axis of rotation and

perpendicularly to the laser beam, characterized in that a plurality of detectors are arranged at any angles next to one another for measuring the

light scattered by the sample, and each <u>detector has an adjusting</u> device with

which the detectors on the rotary platform can be adjusted in their vertical or

horizontal, such that the detector aligns with the laser beam facing towards

the test cell, zero-degree position in relation to the laser beam with the help

of the laser beam so that after $\underline{\text{adjustment all detectors}}$ are aligned to a

common point in the center of rotation.

Detailed Description Text - DETX (4):

the rotary platform, the viewing $\underline{\text{angle of the detectors}}$ can be changed by

any angular value while preserving the <u>adjustment</u> to a common point in the

center of rotation. Up to 30, preferably 4 to 16 detectors, arranged 5.degree.

to 30.degree., preferably 10.degree. to 20.degree., apart can be advantageously secured on a rotary platform.

Detailed Description Text - DETX (10):

FIG. 4 shows the instrument according to this invention with a laser source

1, a focusing device 2, and a sample holder with test cell, which may be of

cylindrical shape, and sample 3, surrounded by a liquid 4 with a refraction

index equal to that of the cell glass, contained in a container 5 made of a

transparent material that also has a refraction index of the test cell glass.

A plurality of detectors (8.1 through 8.10), each detector having an adjusting

device (9.1 through 9.10) are located on swivel arm 6 of rotary platform 7, in

this case 15.degree. apart. The detectors can be either apertured detectors

or fiber detectors.

Claims Text - CLTX (1):

1. An instrument for determining light scattering, comprising a light

source for producing a laser beam directed at a sample contained in a test

cell, the sample being located in the center of a rotary platform, coaxially to

its axis of rotation and perpendicularly to the laser beam, wherein a $\underline{\textbf{plurality}}$

of detectors are arranged at any angles next to one another for
measuring the

light scattered by the sample, and each <u>detector has an adjusting</u> device with

which the detectors on the rotary platform can be adjusted in their zero-degree

position in relation to the laser beam, the zero degree position being that

position initially obtained for each detector by bringing the detector into

axial alignment with the laser beam, so that the laser beam acts as a reference $% \left(1\right) =\left(1\right) \left(1\right) +\left(1\right) \left(1\right) \left(1\right) +\left(1\right) \left(1\right)$

axis parallel to the plane of the rotary platform and perpendicular to the axis

of rotation of the rotary platform, so that after adjustment all detectors are

aligned to a common point in the center of rotation.

Claims Text - CLTX (6):

6. The instrument of claim 1 wherein the <u>detectors arranged on the</u> platform

can be adjusted in their respective zero-degree positions using the laser beam

by aligning all of the detectors to the common point located centrally on the platform.

Claims Text - CLTX (18):

18. An instrument for determining the light scattered by a sample comprising a platform rotatable about an axis of rotation; a sample holder

disposed along the axis of rotation; a light source for producing a beam of

coherent light that can be focused on a sample in the sample holder; and a

plurality of detectors disposed and rotatable about the axis of rotation and

each <u>detector</u> has an adjusting device with which detectors can be adjusted in

their zero-degree position to focus on a common point along the axis of rotation by reference to the beam.